

AMENDMENTS TO THE CLAIMS

Claim 1 (Original): A method of making a transparent article, the method comprising forming a protective coating including a layer consisting essentially of carbon on an optical coating on a substrate;

heating the protective coating in a reactive atmosphere;

reacting the layer consisting of carbon with the reactive atmosphere to form a carbon containing gas; and

removing the layer consisting essentially of carbon from the optical coating to form the transparent article.

Claim 2 (Original): The method according to Claim 1, wherein the forming comprises vapor depositing the protective coating.

Claim 3 (Original): The method according to Claim 2, wherein the vapor depositing comprises sputtering.

Claim 4 (Original): The method according to Claim 1, wherein before the heating the layer consisting essentially of carbon is 1 nm to 10 nm thick.

Claim 5 (Original): The method according to Claim 1, wherein the layer consisting essentially of carbon is doped with nitrogen.

Claim 6 (Original): The method according to Claim 1, wherein the layer consisting essentially of carbon consists of carbon and unavoidable impurities.

Claim 7 (Original): The method according to Claim 1, wherein the carbon in the layer consisting essentially of carbon comprises at least one form of carbon selected from the group consisting of diamond-like carbon and graphite.

Claim 8 (Original): The method according to Claim 1, wherein the reactive atmosphere is an atmosphere containing oxygen.

Claim 9 (Original): The method according to Claim 8, wherein the atmosphere containing oxygen is air.

Claim 10 (Original): The method according to Claim 1, wherein the carbon containing gas comprises at least one compound selected from the group consisting of carbon monoxide and carbon dioxide.

Claim 11 (Original): The method according to Claim 1, wherein the heating comprises raising a temperature of the protective coating to at least 400°C.

Claim 12 (Original): The method according to Claim 1, wherein the heating tempers the optical coating.

Claim 13 (Original): The method according to Claim 1, wherein the heating tempers the substrate.

Claim 14 (Original): The method according to Claim 1, wherein the substrate comprises a glass.

Claim 15 (Original): The method according to Claim 14, wherein the glass is transparent to visible light.

Claim 16 (Original): The method according to Claim 1, wherein the reacting removes all of the layer consisting essentially of carbon from the optical coating.

Claim 17 (Original): The method according to Claim 1, wherein a number of scratches in the optical coating after the removing is no more than 110% of a number of scratches in the optical coating immediately before the forming.

Claim 18 (Original): The method according to Claim 1, wherein the optical coating includes furthest from the substrate a homogeneous outermost layer comprising silicon nitride.

Claim 19 (Original): The method according to Claim 18, wherein
the protective coating further includes a scratch propagation blocker layer between the
layer consisting essentially of carbon and the outermost layer; and
the scratch propagation blocker layer is a homogeneous layer comprising a material
selected from the group consisting of

Ti, Si, Zn, Sn, In, Zr, Al, Cr, Nb, Mo, Hf, Ta and W;
oxides of Ti, Si, Zn, Sn, In, Zr, Al, Cr, Nb, Mo, Hf, Ta and W;
nitrides of Ti, Si, Zn, Sn, In, Zr, Al, Cr, Nb, Mo, Hf, Ta and W; and
mixtures thereof.

Claim 20 (Original): The method according to Claim 19, wherein the scratch
propagation blocker layer consists of unavoidable impurities and a material selected from the
group consisting of

Ti, Si, Zn, Sn, In, Zr, Al, Cr, Nb, Mo, Hf, Ta and W;
oxides of Ti, Si, Zn, Sn, In, Zr, Al, Cr, Nb, Mo, Hf, Ta and W;
nitrides of Ti, Si, Zn, Sn, In, Zr, Al, Cr, Nb, Mo, Hf, Ta and W; and
mixtures thereof.

Claim 21 (Original): The method according to Claim 19, wherein the scratch
propagation blocker layer has a thickness of from 2 to 8 nm.

Claim 22 (Currently Amended): A method of making a transparent article, the method comprising

providing a substrate having an optical coating including furthest from the substrate a homogeneous outermost layer comprising silicon nitride; and

forming a scratch propagation blocker layer on the outermost layer, wherein

the scratch propagation blocker layer is a homogeneous layer comprising a material selected from the group consisting of

Ti, Si, Zn, Sn, In, Zr, Al, Cr, Nb, Mo, Hf, Ta and W;

oxides of Ti, Si, Zn, Sn, In, Zr, Al, Cr, Nb, Mo, Hf, Ta and W;

nitrides of Ti, Si, Zn, Sn, In, Zr, Al, Cr, Nb, Mo, Hf, Ta and W; and

mixtures thereof.

Claim 23 (Currently Amended): The method according to Claim 22, wherein the outermost layer comprises amorphous silicon nitride.

Claim 24 (Original): The method according to Claim 22, wherein the forming comprises vapor depositing the scratch propagation blocker layer on the outermost layer.

Claim 25 (Original): The method according to Claim 22, wherein
the scratch propagation blocker layer comprises a material selected from the group
consisting of TiO_2 , SiO_2 , ZnO , SnO_2 , In_2O_3 , ZrO_2 , Al_2O_3 , Cr_2O_3 , Nb_2O_5 , MoO_3 , HfO_2 , Ta_2O_5 ,
 WO_3 and mixtures thereof; and
the forming comprises
depositing on the outermost layer a metal, a metal suboxide or a metal
subnitride diffusion barrier layer comprising at least one element selected from the group
consisting of Ti, Si, Zn, Sn, In, Zr, Al, Cr, Nb, Mo, Hf, Ta and W;
heating the diffusion barrier layer in an atmosphere containing oxygen; and
reacting the diffusion barrier layer with the oxygen to form the scratch
propagation blocker layer.

Claim 26 (Currently Amended): The method according to Claim 25, wherein the
diffusion barrier layer has a thickness of from ~~4 nm to 6 nm~~ 2 nm to 8 nm.

Claim 27 (Original): The method according to Claim 25, wherein the atmosphere
containing oxygen is air.

Claim 28 (Original): The method according to Claim 25, wherein the heating
comprises raising a temperature of the optical coating to at least 400°C .

Claim 29 (Original): The method according to Claim 25, wherein the heating tempers
the optical coating.

Claim 30 (Original): The method according to Claim 25, wherein the heating tempers the substrate.

Claim 31 (Original): The method according to Claim 25, further comprising depositing a layer consisting essentially of carbon on the diffusion barrier layer before heating the diffusion barrier layer; and reacting the layer consisting essentially of carbon with the oxygen to form a carbon containing gas.

Claim 32 (Original): The method according to Claim 31, wherein the carbon containing gas comprises at least one compound selected from the group consisting of carbon monoxide and carbon dioxide.

Claim 33 (Original): The method according to Claim 22, wherein the substrate comprises a glass.

Claim 34 (Original): The method according to Claim 33, wherein the glass is transparent to visible light.

Claims 35-40 (Canceled)